

### **REMARKS**

In the November 24, 2009 Office Action, all of the claims stand rejected in view of prior art. No other objections or rejections were made in the Office Action.

#### ***Status of Claims and Amendments***

In response to the April 17, 2009 Office Action, Applicant has amended claim 1 and cancelled claim 4, as indicated above. Specifically, claim 1 has been amended to include the subject matter of improperly rejected claim 4. Thus, claims 1, 3 and 5-9 are pending, with claim 1 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

#### ***Rejections - 35 U.S.C. § 103***

In paragraph 4 of the Office Action, claims 1 and 3-9 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,245,182 (hereinafter the "Nakamura patent") in view of U.S. Published Application No. 2002/0098326 (hereinafter the "Sato et al. publication"). Applicant respectfully asserts that the rejection of claim 4 is improper for the reasons set forth below. Accordingly, claim 1 has been amended to include the subject matter of ***improperly*** rejected claim 4. Accordingly, Applicant requests reconsideration and reexamination of the claims.

Specifically, amended independent claim 1 recites a thermosetting and active energy ray curable resin composition that includes a ***polymer*** that is a reaction product of the addition of a monocarboxylic acid having an unsaturated double bond to a polymer having an epoxy group, and a heat-curing agent ***free of compounds*** containing one or more isocyanate

groups and *is one or more compounds selected from the group consisting of chelate compounds, metal alkoxides, silane coupling agents and partial hydrolysate thereof, and acid anhydrides.*

At the top of page 3, the Office Action acknowledges that the Nakamura patent teaches the *inclusion* of a polyfunctional isocyanate.

At the top of page 4 of the Office Action, the subject matter claim 4 (now part of independent claim 1) is rejected with the Office Action alleging that the Sato et al. publication somehow teaches using a "silane coupling agent as an equivalent to polyisocyanate". Applicants respectfully assert that *there is no such teaching or suggestion in the Sato et al. publication* to support this allegation<sup>1</sup>.

Rather, the Sato et al. publication includes a single paragraph that identifies *examples* of heat reacting crosslinking agents, including silane compounds and isocyanate compounds (see paragraph [0038] of the Sato et al. publication). No other teaching or mention of silane compounds is made again anywhere in the specification of the Sato et al. publication. Further, there is no disclosure in the Sato et al. publication that suggests, implies or in any way would lead one to believe that silane compounds are somehow equivalent or interchangeable with isocyanate compounds. The mere mention of two compounds in a single paragraph is not a disclosure, confirmation or suggestion of equivalency or interchangeability. For example, salt and pepper are typically mentioned in the same sentence. However, a person of ordinary skill in the art would not substitute pepper for salt in a cake recipe. The mere mention of a compound is not a disclosure of its chemical properties or the various compounds that it will favorably react with. There is no teaching or

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<sup>1</sup> Page four (4) of the Office Action specifically cites column 10, lines 28-33 of the Sato et al. publication. However, Applicants note that there are no column or line numbers in the Sato et al. publication. It is not possible to identify the section of the Sato et al. publication referred to on page four (4) of the Office Action. Applicants have found mention of silane only in paragraph [0038] of the Sato et al. publication.

suggestion in the Sato et al. publication that would lead one of ordinary skill in the art to conclude that a silane compound and an isocyanate compound are interchangeable with one another.

Further, the rejection of the subject matter of claim 4 (now part of independent claim 1) is improper because the Office Action fails to consider the Sato et al. publication *in its entirety*, as is required by MPEP 2141.02. MPEP 2141.02 specifically states that

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)

As mentioned above, the Sato et al. publication merely lists a plurality of crosslinking agents at paragraph [0038]. However, the Sato et al. publication goes on to explicitly teach the following:

When a resin containing a carboxyl group is crosslinked, for example, a phenol resin, amino resin, amine, aziridine compound, epoxy compound, ***isocyanate compound or metal oxide*** is preferably used as the crosslinking agent. When a resin containing a hydroxyl group is crosslinked, for example, a phenol resin, amino resin, halogen compound, amine, aziridine compound, isocyanate compound, acid anhydride, aldehyde or epoxy compound is preferably used as the crosslinking agent. When a resin containing an isocyanate group is crosslinked, for example, an amine, isocyanate compound acid anhydride, alcohol or epoxy compound is preferably used as the crosslinking agent. (paragraph [0042] of the Sato et al. publication)

The Sato et al. publication explicitly teaches that ***specific*** cross-linking agents are used with ***specific*** types of resin materials. Paragraph [0042] of the Sato et al. publication explicitly teaches that when a carboxyl group or epoxy compound is crosslinked, it is preferable to use an isocyanate compound as the crosslinking agent.

Claim 1 requires a heat-curing agent that is ***free of compounds containing one or more isocyanate groups***. Hence, contrary to the allegations made on page 4 of the Office

Action, the Sato et al. publication *fails* to disclose or suggest that silane compounds and polyisocyanate compounds are interchangeable with one another.

Further, since the Sato et al. publication explicitly states that when a resin containing a carboxyl group is crosslinked, *isocyanate compound or metal oxide* is preferably used as the crosslinking agent, the Sato et al. publication *teaches away* from the claimed invention. Specifically, the Sato et al. publication *teaches the use of isocyanate compounds* with a carboxyl group while independent claim 1 *excludes isocyanate compounds*.

Further, the Sato et al. publication discloses examples of thermoplastic resin materials (see paragraph [0025]), such as polyethylene, polypropylene, poly(meth)acrylic acid, poly(meth)-acrylates, polyvinyl acetate, polyvinyl chloride, polyurethane, polyamide, etc. that are preferably used. These resins are totally different from those of the claimed invention in hydroxyl value, epoxy equivalent, etc. In other words, the Sato et al. publication fails to disclose or suggest *a polymer having a (meth)acryl equivalent of 100 to 300 g/eq, a hydroxyl value of 50 to 550 mg KOH/g, an epoxy equivalent of 7000 g/eq or more, and a weight-average molecular weight of 5000 to 100000*. Therefore, a person of ordinary skill in the art would not look to the Sato et al. publication to fill the deficiencies of the Nakamura patent in order to achieve the claimed invention.

Further, the Nakamura patent stresses the importance of the use of polyfunctional isocyanate (see column 7 line 57 thru column 8 lines 25). In other words, the teachings of the Nakamura patent promote the use of an isocyanate compound, thus further teaching away from the claimed invention, which is *free of compounds containing one or more isocyanate groups*. A person of ordinary skill in the art would not look to modify the Nakamura patent (which stresses the importance of isocyanate compounds) by removing those same isocyanate compounds.

Finally, the claimed invention yields unexpected results, as is demonstrated from the data tabulated for Examples 7 and 8 in Table 1 of the specification (see page 26 of the present application as originally filed). Specifically, as shown in Table 1, Examples 7 and 8 provide a Work Life of 24 hours or more. Such a long Work Life would not be achieved by a person of ordinary skill in the art simply by looking at the materials disclosed in the Nakamura patent that teach that isocyanate compounds are preferred as crosslinking agents, and looking the list of cross-linking materials disclosed in the Sato et al. publication, when the Sato et al. publication also teach the preferred use of isocyanate compounds as crosslinking agents with a carboxyl group. The results tabulated in Table 1 provide an *unpredictable effect* that is not obvious. See *Ortho-McNeil Pharmaceutical, Inc. v. Mylan Laboratories Inc.* 520 F.3d 1358 (Fed. Cir. 2008) and *Procter & Gamble Company v. Teva Pharmaceuticals USA, Inc.* (Fed. Cir. 2009). In both cases, the court was not convinced that given the infinite array of foundational chemical compounds with which to start, one would begin with the same compound selected by the inventor.

As mentioned in the July 9, 2009 Amendment, one of the main objects of the teachings of the Nakamura patent is “for keeping stickiness of the protecting print layer 2 prior to irradiation” (see column 8 at lines 1-11 of the Nakamura patent). To achieve this objective, a polymer having a specific parameter with a polyfunctional isocyanate, a hydroxyl group contained in the polymer is reacted with *an isocyanate group* of the polyfunctional *isocyanate* to form a slightly crosslinked compound (see column 8, lines 8 to 11 of the Nakamura patent). Consequently, the teachings of the Nakamura patent will likely be destroyed if the polyfunctional isocyanate is replaced with another crosslinking agent. Therefore, a person of ordinary skill in the art would have no reason to replace the polyfunctional isocyanate with some other crosslinking agent.

Applicants respectfully assert that the rejection is improper and must be withdrawn.

Under U.S. patent law, the mere fact that the prior art can be modified does *not* make the modification obvious, unless an *apparent reason* exists based on evidence in the record or scientific reasoning for one of ordinary skill in the art to make the modification. See, KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1741 (2007). The KSR Court noted that obviousness cannot be proven merely by showing that the elements of a claimed device were known in the prior art; it must be shown that those of ordinary skill in the art would have had some "apparent reason to combine the known elements in the fashion claimed." Id. at 1741. The current record lacks any apparent reason, suggestion or expectation of success for combining the patents to create Applicants' unique arrangement of a resin compound.

Moreover, Applicant believe that dependent claims 3 and 5-9 are also allowable over the prior art of record in that they depend from independent claim 1, and therefore are allowable for the reasons stated above. Also, the dependent claims 3 and 5-9 are further allowable because they include additional limitations. Thus, Applicant believe that since the prior art of record does not disclose or suggest the invention as set forth in independent claim 1, the prior art of record also fails to disclose or suggest the inventions as set forth in the dependent claims.

Therefore, Applicant respectfully request that this rejection be withdrawn in view of the above comments and amendments.

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Appl. No. 10/533,137  
Amendment dated February 22, 2010  
Reply to Office Action of November 24, 2009

In view of the foregoing amendment and comments, Applicant respectfully asserts that claims 1, 3 and 5-9 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

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